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17. ABSTRACT (MAX. 250 WORDS)

A volunteer, extra-curricular program for gifted students is described. Two main purposes are: to interest and stimulate gifted students in the development and broadening of their perspectives in the science and mathematics fields and to encourage these students to undertake a project in the fields of science or mathematics, in the nature of research, thesis, or other creative work. In order to achieve these purposes, high standards of selection, attendance, and achievement must be set and maintained. Participating students should have a high I.Q. and rank in the top 190 of their class, because the Seminar is limited to 32 students.

The actual Seminar program consists of lectures given once a week. Students are required to attend all lectures during their Sophomore and Junior years, and during their Senior year, students may elect to attend lectures of interest to them. Field trips to see science and mathematics in action is an important part of the Seminar. During the Senior year, students will conduct their own small Seminars devoted to an exchange of information on specific subjects.

The most vital part is the individual projects. Each Seminar student is required to undertake a project and submit progress reports at regular intervals (6-8 weeks). Projects are defined and discussed in the tenth year, studied and worked on in the eleventh year, and developed and presented to the teachers and other students in the twelfth year.

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ED001282

U. S. Office of Education
Talent Development Project

INDIANA COUNTY

(?)

SCIENCE AND MATHEMATICS SEMINAR

A PROGRAM FOR GIFTED SENIOR HIGH SCHOOL STUDENTS

Woodrow L. Phillippi
Ass't. Sup't. of Schools
Director

Ronald M. Coulter, Sup't.
of Schools

Alice H. Davis, Supv.
Special Education

Max C. Harwick, Ass't.
Sup't. of Schools

William M. Bahn
Psychologist

SCIENCE AND MATHEMATICS PROGRAM

A Program for the Gifted Student

INDIANA COUNTY SCHOOLS
Indiana, Pa.

ORIGIN

In 1958, with the encouragement and guidance of Mr. Ronald M. Coulter, Assistant County Superintendent, and Dr. James Burk; High School Principal, a Science Seminar was established at Westinghouse Corporation at Blairsville, under the sponsorship of the high school principals and with the whole-hearted approval and support of the school boards and the high school science and mathematics staff.

Originally two students from each secondary school representing each high school in the county participated in the program.

In 1959-60, Westinghouse Corporation and Syntron Corporation sponsored the Science and Mathematics Seminar. However, in 1960, the Science and Mathematics Program was taken over and sponsored by the Joe Berg Foundation under the direction of Mr. Jacob W. Shapiro. Mr. Shapiro and Mr. Coulter and the Curriculum Committee discussed the feasibility of establishing the Seminar to complement the Science and Mathematics groups and to provide opportunity to those students with an interest in science and mathematics.

PURPOSE

Accordingly, the Science and Mathematics Seminar was planned to begin immediately after the opening of school in the fall of 1958 to:

1. Interest and stimulate gifted students in the development and broadening of their perspectives in the Science and Mathematixs field.

2. Encourage these students to undertake a project in the field of mathematics or science, in the nature of research, thesis, or other creative work.

For this purpose a gifted student was defined as one of exceptional ability or interest in the science and mathematics field, with a high I.Q. and capable of ranking in at least the upper 1% of his class.

This program was established as an entirely voluntary extra curricular activity on the part of the students, industry and professions.

PARTICIPATION

The nine school districts which are in Indiana County participated in the formatios of the Science and Mathematics Seminar. These schools are comprised of: Blairsville, Elders Ridge, Indiana, Laura Lamar, Marion Center, Penns Manor, Purchase Line, Saltsburg and United. These schools have a total enrollment of 5,242 in grades nine through twelve.

Limiting the Science and Mathematics Seminar to 32 students, meant a student would have to be in the top 1% to qualify.

Recruitment of instructors and sponsors is not limited to the area of the school districts. Within a relatively short radius of 50 miles we are fortunate in having many industries and colleges to participate in the program.

STANDARDS

If the purposes of such a program are to be achieved, high standards of selection, attendance and achievement must be set and maintained.

A. Selection

1. Teacher recommendations. (Teacher interpreted to include guidance counselors and administrators, as well as science and mathematics instructors.)

2. Interviews by the School Selection Committee.

3. Examination results.

4. Policies established by the Seminar. It has been the express policy of the Science Seminar that the following two groups o f students be specifically invited to take the examination and apply for admission:

    a. Honor students whose scholastic record and apparent capacity to learn would justify extending this opportunity for enrichment to them.

    b. "Bench Warmers" or "Sleepers" normally classed as "capable but not working to capacity", in the hope that this program might provide the motivation for better all-around scholastic effort.

Pupils from grade 9 were considered eligible for the Science and Mathematics Seminar Program. The examination is administered in May and the program initially gets underway in September.

B. Examination

The Science Seminar is using the Westinghouse Science Talent Search Test, provided by the Joe Berg Foundation. Students must score very high in this test in order to be considered for the Science Seminar.

C. Attendance

Most schools in Pennsylvania have a nearly uniform set of attendance rules. Under the Science Seminar Program a committee headed by one of the high school principals has adopted the following rules for the Science and Mathematics Seminar:

1. Student attendance must meet the same standards as apply to local school attendance.

2. Absence for the following reasons will be accepted as legal absence:

   Illness of student
   Illness or death in family
   Impassable roads, or weather which makes travel unsafe
   Quarantine
   Court appearance

3. Excuses will be required, and failure to receive an excuse at the next consecutive meeting will result in classification of the student's absence as "illegal".

4. Only two illegal excuses will be accepted during the year, and these will include vacation absences, if any occur.

5. Attendance records will be kept by a recorder responsible to the Seminar Director.

The Seminar operates through the school year beginning in September and ending the first week in June.

D. Achievement

All students are expected to be in good standing in his own particular school while attending the Seminar. Failure to do so results in the students withdrawal from the Seminar.

METHOD OF OPERATION

A. School Board Approval

The Science Seminar is set up within the framework of the school system. The school administrator, teachers will best be able to provide the local information needed and the medium of coordination required.

It is highly desirable that a school board approve students participating in the Seminar Program.

It has been our experience that school boards welcome this type of program as extending to the gifted child opportunities which cannot readily be included in the regular school program.

Transportation can be something of a problem and it is left entirely to the student and his parents.

B. Committees: Organization and Duties

1. Curriculum Committee

This committee consists of a member from the staff recruitment committee, some members of the Seminar staff, and science and mathematics teachers of the local high schools.

Duties: Develop a broad curriculum pattern, recommend to the staff recruitment committee areas in which staff members are needed. Suggest possible staff members and assist in procuring them where possible.

2. Staff Recruitment Committee

Includes someone from the business profession, Seminar Director, and individual teachers from the school districts.

Duties: To compile a list of all members of professional groups related to the Science and Mathematics area. To interview the above to solicit their participation in this program.

3. Project Committee

This committee is composed of five science and mathematics teachers approved by the science and mathematics departments of all the High schools. Leaders from industry are also included in this committee.

Duties: To provide and help or assist students in the Seminar in selecting a project. Review any particular projects that are underway in the 12th grade. See that projects are completed and are ready to present the last six weeks of the Seminar.

4. Seminar Chairman

Duties: Directs weekly seminars. Works with Curriculum Committee in setting up curriculum. Arranges revision of schedule if necessary. Arranges for physical facilities required: visual aids equipment and etc. Checks attendance, rules on absence excused, coordinates all sessions.

5. Seminar Director

Assistant County Superintendent of schools acts in this capacity.

Duties: To help the Staff Recruitment and Curriculum Committee to conduct the program and assist in any other ways to improve the program.

C. EVALUATION

The Seminar Chairman evaluates each program according to standards set up by the Project Chairman. In addition the evaluation includes the various reactions of the students. A weekly report is sent to the Seminar Director and is kept on file for further and future use.

D. SUPPLEMENTAL DATA

See Enclosed Material

E. PROJECTS

See Enclosed material

F. FIELD TRIPS

One of the objectives of the Science Seminar is to provide field trips where these pupils can see science and mathematics in operation. This year we have provided two field trips, namely: The Atomic Energy Plant at Saxonburg, and the Gas Storage Plant near Murrysville, Penna.

These field trips have been provided by interested business and industrial establishments of Indiana County.

To: High School Principals

I am of the opinion that the letter below or one similar to it should be sent to all parents who have children nominated to take the Berg Foundation test. This should be on your own letterhead and sent out no later than sometime in April in order that they may be able to inform you whether or not they are interested in having their child take the qualifying examination. You should enclose a stamped envelope addressed to the school.

Woodrow L. Phillipi

SUGGESTED FORM LETTER

Dear Mr. and Mrs. _____:

The Indiana County Board of Education has approved and enthusiastically endorsed the inauguration of a Science Seminar for talented students. It will commence on the first Wednesday after Labor Day at Indiana State College. This will be a joint project in cooperation with all the high schools located in the county.

The faculty on this Seminar will be outstanding scientists connected with various Indiana and neighboring county industries and the Indiana State College. The purpose of this Seminar will be to offer challenging opportunities to the talented students in tenth, eleventh and twelfth grades with aptitudes and interests in the science and mathematics fields.

The selection of students for this special one-night week seminar discussion group will be based on school records, recommendations by principal, guidance counselors and high school teachers and on the results of the test records.

On the basis of inherent ability and potential, your (son or daughter) has been recommended as one of approximately 75 students in the area capable of competing for a place in the Science Seminar. The finally selected group will be limited to approximately 15 to 20 participants.

The Seminar will not be a credit course. There will be no charges involved except perhaps some minor costs for individual research project selected by the student himself later in the Seminar.

The Science Seminar can be described as an educational device for offering science students of exceptionally high ability, instruction in Science concepts, methods and applications, more advanced, rigorous and individualized than can at present be offered under regular high school curriculum. It is distinguished in that it successfully enlists as teachers, technologists and professional scientists of the community.

In evaluating the high school curriculum, it has been felt that one outstanding need has been to find a method of challenging satisfactorily the talents of the superior student. This projected seminar program will offer to such students the opportunity to meet with and learn from working scientists in the community. It is a project of school, industry, and community cooperation. We are indeed fortunate in this community to be able to call on specialized help, as discussion leaders, of outstanding scientists. For your information a partial list of the members of the faculty is attached.

If your (son or daughter) is interested and excited by the opportunity and privilege and would like to take the examination given by the Berg Foundation, please complete and return the attached application blank not later than April_____, 19____.

Should you need to have any questions answered regarding the Seminar, please feel free to contact us.

Sincerely yours,

_____
High School Principal

To: _____
High School Principal or Guidance Director

_____
Address

Please enroll me as an entrant in the special science examination to be given at the State Teachers College, Indiana, Pennsylvania, in early May, 19__
(More details later)

I understand that acceptance for the Science Seminar will depend upon the results of this examination.

Student's name_____

School_____Grade_____19____-____

Parent's signature_____

INDIANA COUNTY SCIENCE SEMINAR

PROJECTS

The Indiana County Science Seminar was established in September, 1960. In February, 1961, of that year a Project Chairman was appointed and students were encouraged to select projects.

After the first group of projects were completed and presented it was suggested by the Seminar Director that project guidelines be prepared.

A committee was selected by the Director. This committee consisted of math and science teachers from various high schools in the county. After a series of meetings tentative guidelines and a list of suggested projects were prepared.

A project committee, consisting of a chairman and three or four science and math teachers, function during the school year. The duties of the committee are to make and revise project guidelines, review and approve student projects, and perform whatever duties the Seminar Director may suggest in regard to projects.

INDIANA COUNTY SCIENCE SEMINAR

PROJECTS 1962-63

PROJECTS SELECTED BY THE JUNIORS

1. Internal Combustion Engine
2. Bolt Predictions
3. Gravitation
4. Muscle Tissue Study
5. Soiless Culture
6. Electronic Game Designs
7. Supergenerative Electronic Motor
8. Seed Formations
9. Study of Raw and Pasturized Milk
10. Aerodynamics
11. Plasma Generator

Tentative Guidelines

Indiana County Science Seminar Projects

The project director will explain fully the meaning and purpose of the project, perhaps in a lecture at the beginning of the seminar.

The deadlines for completed projects plus a list of the project procedures will be given each student.

More information will be made available to all schools about the Indiana County Science Seminar. A central information point will be established for students and teachers involved.

A Seminar project committee will be set up with representatives from each science for evaluating the projects. This committee will screen the suggested projects and if the project meets with the approval of the committee let the student know. If the committee disapproves, the student will be given another chance to submit an acceptable project outline. This committee will meet at least once a year. Teachers from the schools involved will serve on the committee.

Teachers of science and math in the student's school will meet with him periodically to direct him in choosing a project, provide him with reference material, discuss projects and their scope, and help him in any possible way.

After a promect is selected with the seminar committee's approval the student will submit progress reports to the committee at regular intervals (6-8 wks) to keep the committee informed on the work done.

a. The submission of a periodic report will stimulate the pupil to make progress.

b. Reports will reveal any difficulties the student encounters, and the need for advice and help.

c. Reports will be evaluated and returned to the pupil with suggestions and encouragement to continue.

d. A discussion period during which the student may talk over his project with the other members of the seminar may be valuable in terms of an exchange of ideas among the students.

PROJECTS

Projects should be clearly defined and discussed in the tenth year, studied and worked on in the eleventh year, developed and completed in the twelfth year.

Ideas for projects should be discussed in the participating school with the teachers involved.

PROJECTS (continued)

A preliminary outline must be given to the project committee for approval.

Projects should be original as far as the student is concerned, should include both theory and application, and should present a challenge to the student.

Projects should be accompanied by a bound notebook showing records, sketches, information, and drawings, as the student worked.

Projects should be something tangible -- work with something such as a model, demonstrations, charts, or statistics.

No assembly kits unless improved upon.

Student should carry out some definite activity -- should be trying to find out something for himself.

Projects should be presented in the twelfth grade to be viewed by teachers and students involved.

PRESENTATION

1. A display if possible
2. A brief summary given orally
3. Keep a record in a notebook as work progresses and have notebook on display
4. Show whatever drawings, sketches, or pictures needed
5. Information should be well planned and well organized
6. Watch grammar and correct english usage
7. Remember: You can spoil an excellent project by a poor presentation.

Office of Superintendent
Indiana County Public Schools
Indiana, Pennsylvania

--Report on Indiana County Seminar--

_____
Date

Attendance: No. Present_____ No. Absent_____

No. Absent and Unexcused for two or more Sessions_____

Speaker(s) _____ _____
Name Company Name

_____ _____
Company Address

_____ _____

Brief Description of Program: _____

_____

_____

Program Evaluation

Chairman's Evaluation: Superior_____ Average_____ Below Average_____

General Reaction of Students: Superior_____ Average_____ Below Average_____

Project Progress _____

_____

_____

Speaker	Next Week's Program	Topic

Please send to: Woodrow L. Phillippi
Assistant Superintendent
7 N. 6th Street
Indiana, Pennsylvania

9/12/60

INDIANA COUNTY SCIENCE PROGRAM

1960-1961

Date 1960	Topic	Assigned to:
Sept. 21	Fundamentals of Research	Syntron Co. Dr. R. C. Hitchcock
Sept. 28	Hospital Laboratory Techniques and Pathology	Indiana Hospital Mr. John Spaeder Dr. J. Householder
Oct. 5	The Origin of and Exploration for Coal	Penn State University Dept. of Mineral Industries Dr. Speckman Dr. Hartman
Oct. 12	Introductory Physical Metallurgy	Westinghouse Mr. E. C. Bishop
Oct. 19	Elementary Gas Chromatography	Fisher Scientific Mr. D. M. Ottenstein
Oct. 26	Moving Materials by Vibration	Syntron Co. Mr. William E. Sprulin
Nov. 2	New Arts in Communication	Bell Telephone Mr. E. H. England
Nov. 9	Light Dispersing Elements	Fisher Scientific Dr. T. Clark
Nov. 15	Thermodynamic Properties of Common Substances	Joy Manufacturing Co. Mr. Donald Wiebe
Nov. 23	Magnetic Materials	Westinghouse Mr. R. H. Buckwalter
Nov. 30	Solid State Physics	Syntron Mr. N. P. Bosted
Dec. 7	Anatomy and Physiology of the Eye	Dr. Dorsey Hoyt
Dec. 14	Hydraulic and Bimetallic Electric Controls	Robertshaw-Fulton Mr. S. E. Manecke

Dec. 21	Engineering Techniques in Opening Coal Mines	R. & P. Coal Co. Mr. J. J. Schaffer
1961 Jan. 4	Refractory Metals	Westinghouse Mr. Mario Zambernard
Jan. 11	Rubber Compounding	McCreary Tire & Rubber Mr. Lawrence Longworth
Jan. 18	The Circulatory System	County Medial Assoc. Dr. R. F. Waldo
Jan. 25	The Magic of Fire	U. S. Bureau of Mines Mr. Hal H. Engel
Feb. 1	Fundamentals of Spectrophotometry	Fisher Scientific Mr. J. E. Kolter
Feb. 8	Cancelled (snow)	
Feb. 15	Tire Design	McCreary Tire & Rubber Mr. Richard Sollinger
Feb. 22	Corrosion Due to Electrolysis	Peoples Natural Gas Mr. C. A. Erickson
Mar. 1	Drugs and Body Chemistry	Pharmacists Donald J. Kinter
Mar. 8	Radioactivity in the Gas and Oil Industry	Birdwell Co. Robert M. MacFarlane
Mar. 15	Operations Research	Westinghouse Mr. Frank L. Winne
Mar. 22	Mathematics and Statistical Control	McCreary Tire & Rubber Mr. Neil Swarts
Mar. 29	Geology - Its principles and Its Application	Pa. Dept. of Internal Affairs, Geological Survey Mr. Addison Cate
Apr. 5	Geology of Oil and How We Get All the Oil Out of the Ground	Halliburton Company Mr. Ray Wenzel Mr. John Thompson
Apr. 12	Seismographing	Birdwell Co. Mr. Heineck Mr. Thomas Kuhn

Apr. 19	Management as a Career	Ernest & Ernest Co. Mr. James Bassage
April 26	Radioisotopes and the Treatment of Disease	Indiana State College Mr. Dan Reiber
May 3	Guided Missiles USAF Middletown	McCreary Tire * Rubber Mr. Shaffery Day Mr. Harold Reed
May 10	Geological Exploration for Natural Gas	Peoples Natural Gas Mr. G. O. Scott
May 17	Petroleum and Its Related Products	Esso-Standard Oil Mr. H. F. Heflin
May 24	Orthodontias and General Dentistry	Dental Assoc. Dr. D. K. Yourd
May 31	Highway Construction and Design	Dept. of Highways Mr. William Altemus Mr. Michael Rura
June 7	The Actuarial Basis of Insurance	Mr. Joseph Reschini
June 14	Coal Research and Future Developments	R. & P. Coal Co. Mr. Gerald Von Strough
June 21	Coaltricity	Penelectric Company Mr. W. J. Utts
June 28	Chemical Explosives	DuPont Company Mr. Harry Hall
July 5	Vacation	
July 12	New Seminar Year Starts	

INDIANA COUNTY SCIENCE SEMINAR PROGRAMS

1961-1962

Date 1961	Topic	Assigned to:
July 12	Physiology of the Ear	Dr. Dorsey R. Hoyt
July 19	I.B.M. Computors	Mr. Philip Johnson I.B.M.
July 26	Coaltricity	William J. Utts Penna Electric Co.
August 2	Clocks, Watches, Timepieces	Mr. Morris Widdowson Widdowson's Jewelry
August 9	Guns, Gunsmithing	Mr. Ted McQuilkin Twolick Creek Gun Club
August 16	How to Express Yourself in Writing	Mr. Fred Deichart Syntron Company
August 23	Modern Architecture	Mr. Jack Risheberger Heidrick & Risheberger
August 30	Combustion Engines	P. F. Bartele D. E. Miller Howard Nesbitt Cadillac Motor Car Div.
Sept. 6	Forestry	Richard C. Bedger Musser Forests, Inc.
Sept. 13	Cancer Cell Growth	Mrs. J. S. Mack Dr. Fred Kellam
Sept. 20	Navigation	Commander N. B. Baker USNR
Sept. 27	Similarities of Wave Behavior Micro-wave and optical Maser	Robert L. Brimmer L. C. Mason
Oct. 4	Automation	J. W. Philippovic Syntron Company
Oct. 11	Statistics	Dr. James McKinley Indiana State College
Oct. 18	Safety	Mr. Craig Patterson Rochester and Pittsburgh Coal Company

Oct. 25	Banking in General	Mr. Robert W. Fiscus Mr. Robert Fullerton Mr. Louis Jack
November 1	Science of Fire	Mr. Herbert McAnulty Syntron Company
November 8	Organized Labor	Mr. Harvey Younker U.M.W.A.
November 15	Fibers and Fabrics	Miss Mildred Oswalt Indiana State College
November 22	The Science of Management	Dr. James Stoner Indiana State College
November 29	Animal Breeding	John H. Ziegler Penn State University
December 6	Psychoanalysis and Psychiatry	Dr. Roderick McLeod
December 13	Theory and Game Analysis in the Field of Economics	Mr. N. K. Hartman Syntron Company
November 20	Dinosaurs, Man and the Brain	Dr. D. E. Hoffmeister Dr. C. J. Zonisek
January 3	Science in Crime Detection	Harold M. Moorhead Pa. State Police
January 10	Radiology, Radiation from Radium and Radioactive Isotopes in treatment of disease	E. C. Long, M. D. Indiana Hospital
January 17	Economics of Finance, Investments	Mr. S. E. Clelland Elmer E. Powell & Co.
January 24	Strength of Various Materials, Compression, Wood, Metal, Plastics	Mr. W. V. Spurlin Syntron Company
January 31	Classification, description, preparation and uses of Ceramics used in Electrical Industry	Mr. John Harnish Westinghouse Electric Mr. George Martin
February 7	Fossils, Definition, how formed, types Importance	Dr. Donald Hoffmeister Indiana State College
February 14	Thought and Logic puzzles, Logic in Mathematics, Mathematical puzzles, special mathematical puzzles	Miss Laura Church Mr. Clifford Simpson
February 21	Integration of Geometry and Algebra	Mr. Edwin Bailey Indiana State College
February 28	Theory of Atoms, Molecules, and Crystals	Edward H. Brown Indiana State College

March 7	Scientific Background of Spectrophotometry Electromagnetic Spectrum, Interaction between matter and energy.	Mr. James Cannon Fisher Scientific
March 14	New Treatments for Mental Illness	Dr. Saul Greisman, M.D. Torrance State Hospital
March 21	Predictions Based on Theory and Experimenting to Test These Predictions	Dr. Daniel G. Reiber Indiana State College
March 28	Electrical Theory, Uses of AC and DC. Resource for Rectifiers.	Mr. Harold Wood Syntron Company
April 4	Cell Division, Production and Development of the Embryo of the Frog.	Dr. Walter Gallati Indiana State College
April 11	SEVEN OF THE SENIORS PRESENTED THEIR PROJECTS	
	Influence of Light, Fertilizer and Irradated Seeds on Plant Growth	James Adams, Senior Blairsville Joint
	Atomic Models	Carole Aldrich, Senior Blairsville Joint
	Electrolysis	Jane Boering, Senior Indiana Joint (Keith)
	Building a Reflecting Telescope	Avonel Crist, Senior Marion Center Joint
	Radio Wave Propagation	Robert Ruse, Senior Penns Manor Joint
	Astrophotography	Paul Stenman, Senior Marion Center Joint
	Effect of Balanced Diet vs Unbalanced Diet on Guinea Pigs	Beckie Walker Marion Center
April 18	Shaft Seals, Concepts and Problems of Design Test evaluating of materials	Mr. Alfred Moore Syntron Company
April 25	Elements of Accounting, Theory of Debit and Credit. Accounting Procedure.	Mr. W. W. Allshouse Syntron Company
May 2	Testing Soil and Forage, Soil Conservation Dairy Herd Improvements	Ward M. Stover County Ag. Agent
May 16	Time Motion Study in Manufacturing	Richard Lawry Syntron Company
May 23	Science and Art involved in Usual Sounds, Chords, Dischords, and Modern verse. Traditional	Dr. H. S. Overdorff Indiana State College

INDIANA COUNTY SCIENCE SEMINAR PROGRAM

1962-1963

DATE 1962	TOPIC	ASSIGNED TO:
Sept. 5	Pure and Applied Science	Syntron Co. Dr. R. C. Hitchcock
Sept. 12	Crystals	Aluminum Co. of America Mr. Wm. G. Fricke, Jr.
Sept. 19	Radioisotopes in Medicine	Dr. Walter Jetter
Sept. 26	Elements of Thermostats	Robertshaw-Fulton Co. Robert S. Crawford
Oct. 3	Telstar	Bell Telephone Edward A. Mason
Oct. 10	Plastics	Plastic Division Mr. Reese
Oct. 17	Mathematics and Logic	West Penn Power Co. Mr. Peter Hadfalvi
Oct. 24	Magnetic Theory	Westinghouse Electric Mr. Richard Buckwalter
Oct. 31	Identification - Science in Crime	Bureau of Criminal Investigation Columbo Previte Corp. Karl Egar
Nov. 7		Westinghouse Elect. Co. S. Bartnoff
Nov. 14	Modern Mathematics	Indiana State College
Nov. 21	Structure and Function of the Eye	Dr. Robert Goldstrohm
Nov. 28	Pyrothecnics	Federal Laboratories Dr. W. H Durno
Dec. 5	Moving Materials by Vibration	Syntron Company Mr. Arthur Jones

Dec. 12	Cardiovascular System	Dr. R. F. Waldo Physician
Dec. 19	Skin and Scuba Diving	United States Steel Wallace Mundell
Jan. 2	Tire Engineering	McCreary Tire & Rubber Richard Sollinger

Policy for the Indiana County Science Seminar Program

The Indiana County Science Seminar is a continuing program which will be maintained as long as there is student interest.

The program is under the general direction of a County Advisory Committee composed as follows: a General Chairman elected by the County Advisory Committee, the Chairman of the Curriculum Staff, and Project Committee, the Seminar Chairman, and ex-officio, the County Director, and the President of the Indiana County Secondary School Principals Association.

Supervision of Seminar

The Seminar will be under the supervision of a Chairman selected by the County Advisory Committee from the faculty of the resident center. This Chairman will be responsible for working with the Seminar General Chairman in developing curriculum, securing a staff, promoting projects, and in general coordination of Seminar activities.

Eligibility

Students will make application to enter the program during their ninth year in high school. Students will be chosen from the applicants based on their performance on a screening test administered by the Joe Berg Foundation. It is recommended that the number of students not exceed thirty. They will begin the program at the first meeting in July prior to the beginning of their Sophomore year. They will remain in the program as long as they maintain acceptable grades in their regular school curriculum, maintain regular attendance in the lecture program, and show satisfactory progress on quizzes administered by the lecturers. Students will leave the program on graduation from high school.

Lecture Program

The lecture program consists of 100 lectures given one each week over a two-year period. Students are required to attend all lectures during their Sophomore and Junior years unless they provide an excuse suitable to the Seminar Chairman. During their Senior year, students may elect to attend lectures of interest to them; however, attendance is not compulsory.

Student Seminar Program

During the Senior year, students will conduct their own small Seminars devoted to an exchange of information on specific subjects. Each Seminar will consist of a suggested maximum of eight students, each interested in the same general area of science. Each student will make at least four presentations during the year to the group and discussion will follow. The volunteer project sponsors will serve as moderators in each of these groups.

Project Program

Each student is required to begin work on a scientific project not later than the beginning of his Junior year. It is normally expected that this project will be completed during the Junior year or early in the Senior year. Each student will have the opportunity to consult with an individual volunteer project sponsor. This person will be a man selected from industry or the professions having knowledge of that field of science of particular interest to the student.

Responsibility of Students

A. He must attend all lectures. Good reason must be given for all absences and more than two absences per year for reasons other than illness constitute cause for being dropped from the Seminar.

B. Each student is responsible for the subject matter of all lectures.

1. He must keep a notebook.
2. He must read outside of class.
3. He must take and pass periodic examinations.
4. He must undertake a project involving experiments, reading, construction, etc.

C. Each student must maintain good grades (A-B) in regular class work in all subjects and his behavior must be satisfactory.